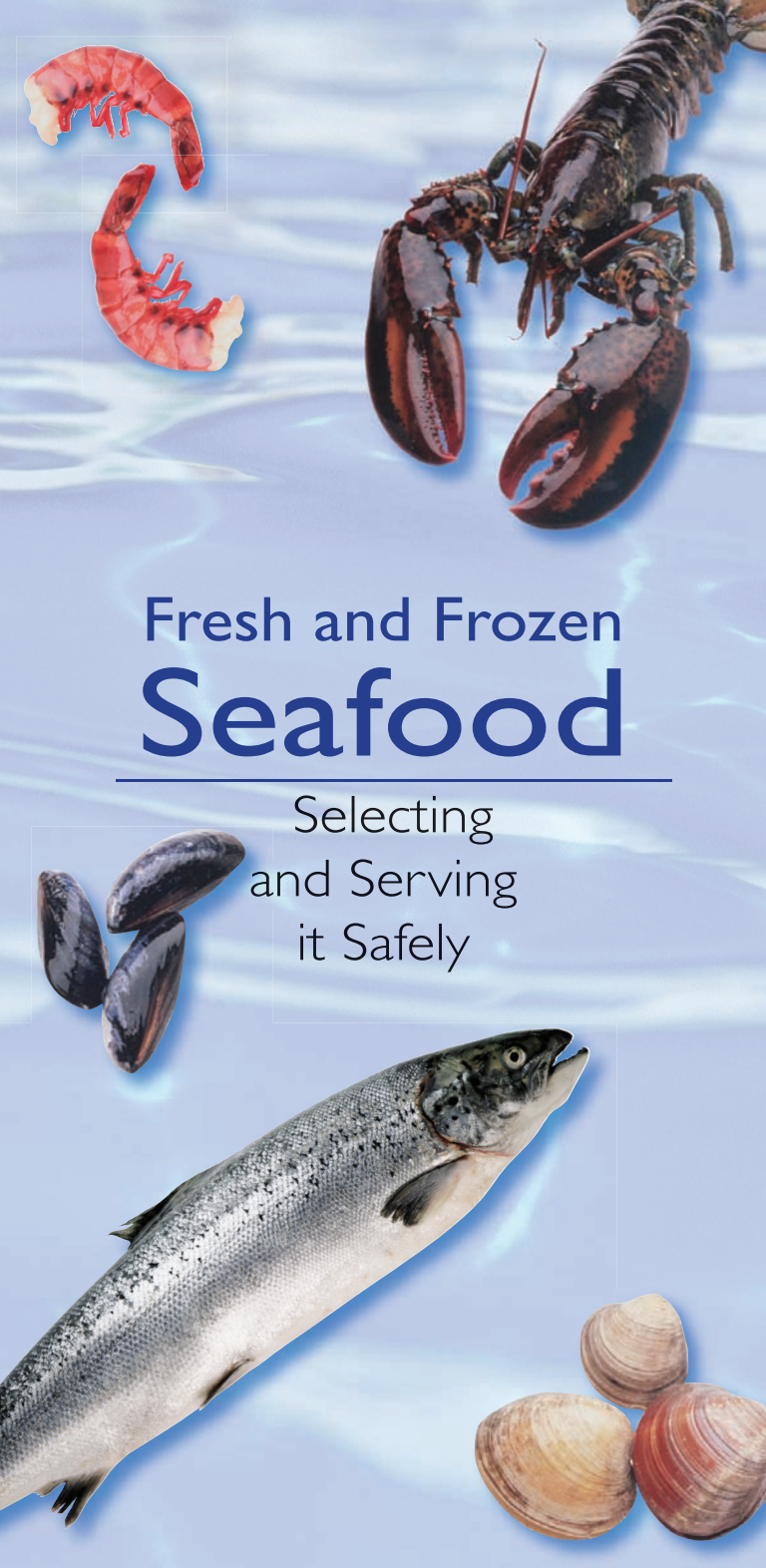

Fresh and Frozen Seafood

Selecting and Serving it Safely

U.S. Food and Drug Administration

Inside

About Nutrition . . .

Fish and shellfish are an important part of a healthy diet. They contain high quality protein and other essential nutrients . . . are low in saturated and *trans* fat . . . and contain omega-3 fatty acids. In fact, a well-balanced diet that includes a variety of fish and shellfish can contribute to heart health and aid in children's proper growth and development.

. . . and Safety

But, as with any type of food, it's important to handle seafood safely in order to reduce the risk of foodborne illness. Follow these basic food safety tips for buying, preparing, and storing fish and shellfish — and you and your family can safely enjoy the fine taste and good nutrition of seafood.

Buying from a retailer who follows proper food handling practices helps assure that the seafood you buy is safe — and helps maintain the quality of the seafood too. Be sure to check out a market's seafood counter carefully to see whether the seller is practicing proper food handling techniques. Ask yourself: *What is my general impression of this facility? Does it look and smell clean?*

Fresh Fish: How To Choose It

To be sure the safety of seafood is being properly preserved, only buy fish that is refrigerated or properly iced. Fish should be displayed on a thick bed of fresh ice that is not melting, and preferably in a case or under some type of cover.

- Fish should **smell fresh and mild**, not fishy, sour, or ammonia-like.
- A fish's **eyes should be clear** and bulge a little (except for a few naturally cloudy-eyed fish types, such as walleye pike).
- Whole fish and fillets should have **firm, shiny flesh** and bright red gills free from slime. Dull flesh could mean the fish is old. *Note: Fish fillets that have been previously frozen may have lost some of their shine, but they are fine to eat.*
- The flesh should spring back when pressed.
- Fish fillets should display **no darkening or drying** around the edges. They should have no green or yellowish discoloration, and should not appear dry or mushy in any areas.

Why Freshness Counts

Healthwise, it is important to look for freshness when choosing seafood. In some species, if the catch has been left out in the sun too long — or the fish haven't been transported under proper refrigeration — toxins known as **scombrotoxin,** or histamine, can develop. Eating spoiled fish that have high levels of these toxins can cause illness.

Frozen Fish: Know What To Look For

Today, fresh catches can be processed and frozen immediately to very low temperatures — frequently, this takes place right on the fishing vessel. However, frozen seafood can spoil if the fish thaws during transport and is left at warm temperatures for too long.

To help ensure that the frozen fish you're buying is safe, follow these guidelines:

- Don't buy frozen seafood if its package is open, torn or crushed on the edges.
- Avoid packages that are positioned above the "frost line" or top of the freezer case in the store's freezer.
- If the package cover is transparent, look for signs of frost or ice crystals. These could mean the fish has been stored a long time or thawed and refrozen — in which case, choose another package.

Selecting Shellfish:
Some Special Guidelines

The Food and Drug Administration requires shellfish harvesters and processors of oysters, clams, and mussels to put a tag on sacks or containers of live shellfish (in the shell), and a label on containers or packages of shucked shellfish.

- Tags and labels contain specific information about the product, including a certification number for the processor, which means that the shellfish were harvested and processed in accordance with national shellfish safety controls.
- Ask to see the tag or check the label when purchasing shellfish.

In addition, follow these general guidelines:

1. **Discard Cracked/Broken Ones:** Throw away clams, oysters, and mussels if their shells are cracked or broken.
2. **Do a "Tap Test":** Live clams, oysters, and mussels will close up when the shell is tapped. If they don't close when tapped, do not select them.
3. **Check for Leg Movement:** Live crabs and lobsters should show some leg movement. They spoil rapidly after death, so only live crabs and lobsters should be selected nd prepared.

Keep It Safe Until You Eat It

Put seafood on ice or in the refrigerator or freezer soon after buying it, using these guidelines for safe storage:

- If seafood **will be used within two days** after purchase, **store it in the refrigerator**.
- If seafood **won't be used within two days** after purchase, wrap it tightly in moisture-proof freezer paper or foil to protect it from air leaks, and store it **in the freezer.**

When You Catch Your Own: Tips for Staying Safe

Before:

- Always check local advisories and sign postings for information about the safety of fish and shellfish in your area.

During:

- Be sure to keep fish and shellfish well iced while fishing and while transporting the seafood home.

After:

- Fish caught in some lakes and streams may have harmful levels of Polychlorinated Biphenyls or PCBs, which can cause a variety of health problems.*
- Since PCBs accumulate in fat, trim the fat and skin from fish before cooking. This can lessen the risk of exposure to these contaminants.
- Broil, grill, or bake the trimmed, skinned fish on a rack so the fat drips away.

* Harmful levels of PCBs have not been found in fish that are sold in the commercial marketplace, including farm-raised species.

Thaw It Safely

Thaw frozen seafood gradually by placing it in the refrigerator overnight. If you have to thaw seafood quickly, either seal it in a plastic bag and immerse it in cold water, or — if the food will be cooked immediately thereafter — microwave it on the "defrost" setting and stop the defrost cycle while the fish is **still icy but pliable**.

Prevent Cross-Contamination

When you're preparing fresh or thawed seafood, it's important to prevent bacteria from the *raw seafood* from spreading to *ready-to-eat food*. Take these steps to avoid cross-contamination between raw and cooked foods:

- Wash hands thoroughly with soap and warm water ***before*** and ***after*** handling any raw food.
- Wash the cutting board with soap and hot water to remove food particles and juices *after* using it for raw foods such as seafood, and *before* using the board for cooked or ready-to-eat foods or preparing another food item.
  - As an added precaution, sanitize cutting boards by rinsing them in a solution made of one teaspoon of chlorine bleach in one quart of water — or run the plastic board through the wash cycle in your automatic dishwasher. Or, consider using one cutting board only for raw foods and another only for ready-to-eat foods such as bread, fresh fruit and vegetables, and cooked fish.
  - As a rule of thumb, avoid using cutting boards that are made of soft, porous materials. Instead, choose those made of hard maple or plastic, and make sure they are free of cracks and crevices. Smooth surfaces can be cleaned more easily and thoroughly.

Cook It Properly

Most seafood should be cooked to an internal temperature of 145 °F. But if you don't have a food thermometer, there are other ways to determine whether seafood is done.

- **Fish:** Slip the point of a sharp knife into the flesh and pull it aside. The flesh should be opaque and separate easily. If you cooked the fish in the microwave, check it in more than one spot to help ensure doneness.
- **Shrimp and Lobster:** The flesh becomes pearly-opaque.
- **Scallops:** The flesh turns milky white or opaque and firm.

- **Clams, Mussels, and Oysters:** Watch for the point at which their shells open, which means they're done. Throw out the ones that don't open.

Don't Cross-Contaminate

Cross-contamination can happen once your seafood is cooked, too. Here are simple ways to keep your seafood safe when serving:

- Place cooked seafood on a clean plate for serving. If cooked foods are placed on an unwashed plate that previously held raw seafood, bacteria from the raw food could contaminate the cooked seafood.
- Use clean utensils to serve food — not those used in preparation of the raw food.

Picnic Tip: A Clean Cooler Is Critical

Be sure to clean coolers with hot soapy water before packing cooked seafood. Cleaning is especially important if the cooler was previously used to transport raw seafood. A clean cooler prevents harmful bacteria from the *raw* fish from contaminating *cooked* seafood or other foods.

Temperature Counts

Follow these serving guidelines once your seafood is cooked and ready to be enjoyed.

- Never leave seafood or other perishable food out of the refrigerator for more than 2 hours — or, for more than 1 hour when temperatures are above 90 °F. Bacteria that can cause illness grow quickly at warm temperatures (temperatures between 40 °F and 140 °F).
- Carry picnic seafood in a cooler with a cold pack or ice. When possible, put the cooler in the shade. Keep the lid closed as much of the time as you can.
- When it's party time, keep hot seafood hot and cold seafood cold:
  - Divide hot party dishes containing seafood into smaller serving platters. Keep platters refrigerated until time to reheat them for serving.
  - Keep cold seafood on ice or serve it throughout the gathering from platters kept in the refrigerator.

What You Need To Know

It's always best to cook seafood thoroughly to minimize the risk of foodborne illness. However, if you choose to eat raw fish anyway, one rule of thumb is to eat fish that has been previously frozen.

- Some species of fish can contain parasites, and freezing will kill any parasites that may be present.
- However, be aware that freezing doesn't kill *all* harmful microorganisms. That's why the safest route is to cook your seafood.

An Important Note About Oysters:

Some oysters are treated for safety after they are harvested. That information may or may not be on the label. However, these oysters should still **not be eaten raw by people at risk** for foodborne illness. The post-harvest treatment eliminates some naturally occurring pathogens, but it does not remove all pathogens that can cause illness.

Special Health Notes

Keep in mind that some people are at greater risk for foodborne illness, and should not eat raw or partially cooked fish or shellfish. These susceptible groups include:

- Pregnant women
- Young children
- Older adults
- Persons whose immune systems are compromised
- Persons who have decreased stomach acidity

If you are unsure of your risk, ask your healthcare provider.

Smoked Seafood:
Avoiding Listeriosis

Pregnant women, older adults, and people with weakened immune systems have an increased chance of getting a foodborne illness called listeriosis. If you are in one of these groups, there is a simple step you can take to reduce your chance of contracting the listeriosis disease from seafood:

- Avoid refrigerated types of smoked seafood except in a cooked recipe, such as a casserole. Refrigerated smoked seafood, such as salmon, trout, whitefish, cod, tuna, or mackerel, is usually labeled as "nova-style," "lox," "kippered," "smoked," or "jerky" and can be found in the refrigerated section of grocery stores and delicatessens. They should be avoided.
- You needn't worry about getting listeriosis from canned or shelf-stable smoked seafood.

For Moms and Moms-to-Be

If you are pregnant, nursing your child, or thinking about becoming pregnant, it is important that you avoid consuming too much methylmercury. This substance can be found in certain fish, and it can harm an unborn child's developing nervous system if eaten regularly.

Don't Eat . . .

Avoid these four fish species:

- Shark
- Swordfish
- King mackerel
- Tilefish

However, don't deny yourself or your unborn baby the nutritional benefits of fish — you can eat 12 ounces (2 average meals) a week of other types of cooked fish, as long as you eat a variety of kinds that are lower in mercury. This same advice should be followed when you're feeding fish and shellfish to your young child, but serve smaller portions.

Do Eat . . .

Five of the most commonly eaten fish that are low in mercury are:

- Shrimp
- Canned light tuna*
- Salmon
- Pollock
- Catfish

"Local Catch" Alert:

Be sure and check local advisories about the safety of fish caught by family and friends in your local lakes, rivers, and coastal areas.

*Another commonly-eaten fish, albacore ("White") tuna, has more mercury than canned light tuna. So, when choosing your two meals of fish and shellfish, you may eat up to 6 ounces (one average meal) of albacore tuna per week.

By following the basic food safety tips for buying, preparing, and storing fish and shellfish . . .

. . . you and your family can safely enjoy the fine taste and good nutrition of seafood.

JMH Education, New York, NY